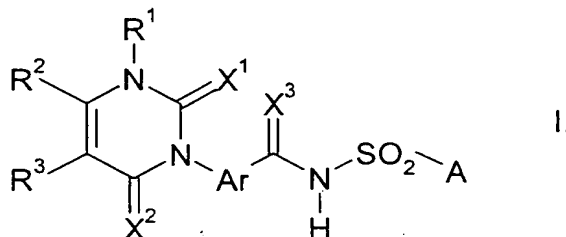


We claim:

1. A process for preparing 3-phenyl(thio)uracils or 3-phenyldithiouracils of the formula I

5



where the variables are each defined as follows:

- 10 R^1 is hydrogen, cyano, amino, C_1 - C_6 -alkyl, C_1 - C_3 -cyanoalkyl, C_1 - C_6 -haloalkyl, C_1 - C_6 -haloalkoxy, C_3 - C_7 -cycloalkyl, C_2 - C_6 -alkenyl, C_2 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl, C_3 - C_6 -haloalkynyl or phenyl- C_1 - C_4 -alkyl;

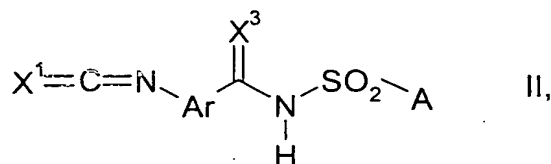
- 15 R^2 and R^3 are each independently hydrogen, C_1 - C_6 -alkyl, C_1 - C_6 -haloalkyl, C_3 - C_7 -cycloalkyl, C_2 - C_6 -alkenyl, C_2 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl or C_3 - C_6 -haloalkynyl;

X^1 , X^2 and X^3 are each independently oxygen or sulfur;

- 20 Ar is phenyl, which may be mono- or polysubstituted by the following groups: hydrogen, halogen, cyano, C_1 - C_4 -alkyl or C_1 - C_4 -haloalkyl; and

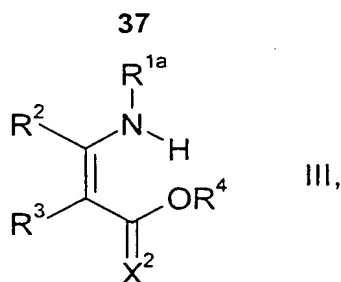
A is a radical derived from a primary or secondary amine or NH_2 ;

- 25 comprising the reaction of a phenyl iso(thio)cyanate of the formula II



- 30 where the variables X^1 , X^3 , Ar and A are each as defined above, with an enamine of the general formula III

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where

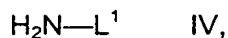
R^{1a} is as defined above for R^1 with the exception of amino;

R^2 , R^3 and X^2 are each as defined above; and

R^4 is C_1 - C_6 -alkyl, C_1 - C_6 -haloalkyl, C_1 - C_3 -alkoxy- C_1 - C_3 -alkyl, C_1 - C_3 -alkylthio- C_1 - C_3 -alkyl, C_2 - C_6 -alkenyl, C_2 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl, C_3 - C_6 -haloalkynyl, C_3 - C_7 -cycloalkyl, C_1 - C_6 -cyanoalkyl or benzyl which is itself unsubstituted or substituted on the phenyl ring by methyl, methoxy, methylthio, halogen, nitro or cyano;

in the presence of from 1.8 to 2.6 base equivalents per mole of the phenyl iso(thio)cyanate of the formula II;

and, if appropriate, in a further step, the reaction of the resulting 3-phenyl(thio)uracil or 3-phenyldithiouracil of the formula I where $R^1=R^{1a}$, where R^1 is hydrogen, with an aminating agent of the formula IV



where L^1 is a nucleophilic leaving group

to give 3-phenyl(thio)uracils or 3-phenyldithiouracils of the formula I where R^1 = amino.

2. The process according to claim 1, wherein the reaction is effected in the presence of a base which is selected from alkali metal and alkaline earth metal carbonates, alkali metal and alkaline earth metal alkoxides, alkali metal and alkaline earth metal hydrides and tertiary amines.
3. The process according to either of the preceding claims, wherein the reaction is effected in at least one aprotic polar solvent, and the aprotic polar solvent has a water content of from 0 to 0.5% by weight, based on the total amount of

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compound II, compound III and solvent.

4. The process according to claim 3, wherein the solvent comprises at least 50% by volume of an aprotic polar solvent selected from carboxamides, carboxylic esters, carbonates, nitriles and sulfoxides.
5. The process according to claim 4, wherein the solvent comprises at least 80% by weight of an aprotic polar solvent.
6. The process according to any of the preceding claims, wherein from 0.9 to 1.3 mol of the enamine of the formula III are used per mole of the compound II.
7. The process according to any of the preceding claims, wherein a 3-phenyl(thio)-uracil or a 3-phenyldithiouracil, where R^1 is hydrogen, is prepared and this compound I is subsequently

(A) reacted with an aminating agent of the formula IV



where L^1 is a nucleophilically displaceable leaving group to obtain a compound of the formula I where

R^1 is amino; and

the variables R^2 , R^3 , X^1 , X^2 , X^3 , Ar and A are each as defined above; or

(B) reacted with an alkylating agent of the formula V



where

R^{1b} is C_1 - C_6 -alkyl, C_1 - C_6 -haloalkyl, C_3 - C_7 -cycloalkyl, C_2 - C_6 -alkenyl, C_2 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl or C_3 - C_6 -haloalkynyl; and

L^2 is a nucleophilically displaceable leaving group;

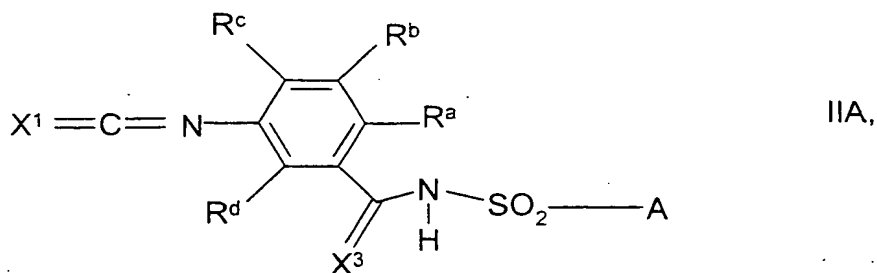
to obtain a compound of the general formula I where

R^1 is as defined for R^{1b} ; and

the variables R^2 , R^3 , X^1 , X^2 , X^3 , Ar and A are each as defined above.

8. The process according to any of the preceding claims, wherein the phenyl iso(thio)cyanate of the formula II is described by the formula II/A

39



where

X^1 , X^3 and A are each as defined above and

- 5 R^a , R^b , R^c and R^d are each independently
hydrogen, halogen, cyano, C_1 - C_4 -alkyl or C_1 - C_4 -haloalkyl.

9. The process according to claim 8, wherein, in formula IIA,
 R^a is halogen, cyano or trifluoromethyl;

- 10 R^c is hydrogen or halogen; and
 R^b and R^d are each hydrogen.

10. The process according to any of the preceding claims, wherein the A radical is
- NR^5R^6 where the variables R^5 and R^6 are each defined as follows:

- 15 R^5 and R^6 are each independently
hydrogen, C_1 - C_{10} -alkyl, C_2 - C_{10} -alkenyl or C_2 - C_{10} -alkynyl, each of which may
be unsubstituted or substituted by one of the following radicals:

- C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, CN, NO_2 , formyl, C_1 - C_4 -alkylcarbonyl,
 C_1 - C_4 -alkoxycarbonyl, C_1 - C_4 -alkylaminocarbonyl, C_1 - C_4 -
20 dialkylaminocarbonyl, C_1 - C_4 -alkylsulfinyl, C_1 - C_4 -alkylsulfonyl, C_3 - C_{10} -
cycloalkyl, 3- to 8-membered heterocyclyl having from one to three
heteroatoms selected from O, S, N and an NR^7 group

- where R^7 is hydrogen, C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl or C_3 - C_6 -alkynyl,
phenyl which may itself have 1, 2, 3 or 4 substituents selected from

- 25 halogen, C_1 - C_4 -alkyl, C_1 - C_4 -alkoxy, C_1 - C_4 -fluoroalkyl,
 C_1 - C_4 -alkyloxycarbonyl, trifluoromethylsulfonyl, C_1 - C_3 -alkylamino,
 C_1 - C_3 -dialkylamino, formyl, nitro or cyano;

- C_1 - C_{10} -haloalkyl, C_2 - C_{10} -haloalkenyl, C_2 - C_{10} -haloalkynyl, C_3 - C_8 -cycloalkyl, C_3 - C_{10} -
cycloalkenyl, 3- to 8-membered heterocyclyl having from one to three
30 heteroatoms selected from O, S, N and an NR^7 group where R^7 is hydrogen,
 C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl or C_3 - C_6 -alkynyl,
phenyl or naphthyl,

where C_3 - C_8 -cycloalkyl, C_3 - C_{10} -cycloalkenyl, 3- to 8-membered heterocyclyl,
phenyl or naphthyl, each of which may themselves have 1, 2, 3 or 4

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substituents selected from halogen, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-fluoroalkyl, C₁-C₄-alkyloxycarbonyl, trifluoromethylsulfonyl, formyl, C₁-C₃-alkylamino, C₁-C₃-dialkylamino, phenoxy, nitro or cyano; or

5

R⁵ and R⁶ together form a saturated or partially unsaturated 5- to 8-membered nitrogen heterocycle which may have, as ring members, one or two carbonyl groups, thiocarbonyl groups and/or one or two further heteroatoms selected from O, S, N and an NR⁷ group

10

where R⁷ is hydrogen, C₁-C₆-alkyl, C₃-C₆-alkenyl or C₃-C₆-alkynyl, and which may be substituted by C₁-C₄-alkyl, C₁-C₄-alkoxy and/or C₁-C₄-haloalkyl

15

11. The process according to claim 10, wherein R⁵ and R⁶ are each defined as follows:

R⁵ and R⁶ are each independently

hydrogen, C₁-C₆-alkyl which may if appropriate carry a substituent selected from the group consisting of halogen, cyano, C₁-C₄-alkoxy, C₁-C₄-alkyloxycarbonyl, C₁-C₄-alkylthio, C₃-C₆-cycloalkyl, furyl, thienyl, 1,3-dioxolanyl and phenyl

which may itself optionally be substituted by halogen or C₁-C₄-alkoxy;

20

C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl or phenyl

which may if appropriate carry 1 or 2 substituents selected from the group consisting of halogen, C₁-C₄-alkyl, C₁-C₄-fluoroalkyl, C₁-C₄-alkoxy, C₁-C₄-alkyloxycarbonyl, nitro and C₁-C₃-dialkylamino;

naphthyl or pyridyl; or

25

R⁵ and R⁶ together form a five-, six- or seven-membered saturated or unsaturated nitrogen heterocycle which may contain, as a ring member, one further heteroatom selected from N, O and an NR⁷ group

where R⁷ is hydrogen, C₁-C₆-alkyl, C₃-C₆-alkenyl or C₃-C₆-alkynyl,

and/or may be substituted by one, two or three substituents selected from C₁-C₄-alkyl and C₁-C₄-haloalkyl.

30

12. The process according to any of the preceding claims, wherein X¹, X² and X³ are each oxygen.

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13. The process according to any of the preceding claims, wherein R¹ is hydrogen, amino or C₁-C₄-alkyl.

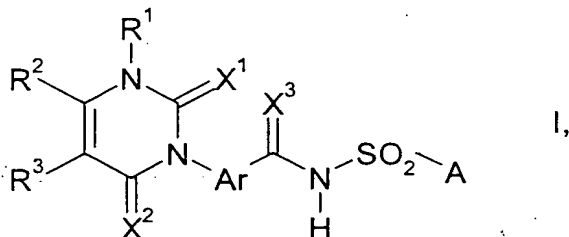
14. The process according to any of the preceding claims, wherein R² is hydrogen, C₁-C₄-alkyl or C₁-C₄-haloalkyl.

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15. The process according to any of the preceding claims, wherein R^3 is hydrogen.

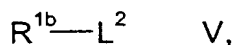
16. A process for preparing 3-phenyl(thio)uracils or 3-phenyldithiouracils of the formula I

5



where

- 10 R^1 is C_1 - C_6 -alkyl, C_1 - C_6 -haloalkyl, C_3 - C_7 -cycloalkyl, C_2 - C_6 -alkenyl, C_2 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl or C_3 - C_6 -haloalkynyl;
 R^2 and R^3 are each independently
hydrogen, C_1 - C_6 -alkyl, C_1 - C_6 -haloalkyl, C_3 - C_7 -cycloalkyl, C_2 - C_6 -alkenyl,
 C_2 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl or C_3 - C_6 -haloalkynyl;
15 X^1 , X^2 and X^3 are each independently oxygen or sulfur;
Ar is phenyl, which may be mono- or polysubstituted by the following groups:
hydrogen, halogen, cyano, C_1 - C_4 -alkyl or C_1 - C_4 -haloalkyl; and
A is a radical derived from a primary or secondary amine or NH_2 ,
wherein 3-phenyl(thio)uracils or 3-phenyldithiouracils of the formula I, where R^1 is
20 hydrogen, are reacted with an alkylating agent of the formula V



where L^2 is a nucleophilically displaceable leaving group, and

25

R^{1b} is C_1 - C_6 -alkyl, C_1 - C_6 -haloalkyl, C_3 - C_7 -cycloalkyl, C_2 - C_6 -alkenyl, C_2 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl or C_3 - C_6 -haloalkynyl.